

Chapter 23
Data handling-III (Bar Graphs)

Exercise 23.1

Q.1 The following table shows the daily production of TV sets in an industry for 7 days of a week.

Day	Mon	Tue	wed	Thurs	fri	Sat	Sun
Number of TV sets	300	400	150	250	100	350	200

Represent the above information by a pictograph.

Solution: Consider That a TV icon represents 100 TV, so.

 = 100 TV.

Mon $300/100 = 3$ icons

Tue $400/100 = 4$ icons

Wed $150/100 = 1.5$ icons

Thur $250/100 = 2.5$ icons

fri $100/100 = 1$ icon

Sat $350/100 = 3.5$ icon

Sunday $200/100 = 2$ icons.

Then Below is a pictograph for above data

Days	Number of Icons
Monday	  
Tuesday	   
Wednesday	 
Thursday	  
Friday	
Saturday	   
Sunday	 

Q.2 The following table shows the number of Maruti cars sold by five dealers in a particular month.

Dealer	Saya	Bagga links	D.D Motors	Bhasin Motor	Competent Motors
Cars sold	60	40	20	15	10

Represent the above information by a pictograph.

Solution

Dealer	Cars sold
Saya	     
Bagga links	   
D.D Motors	 
Bhasin Motor	 
Competent Motor	

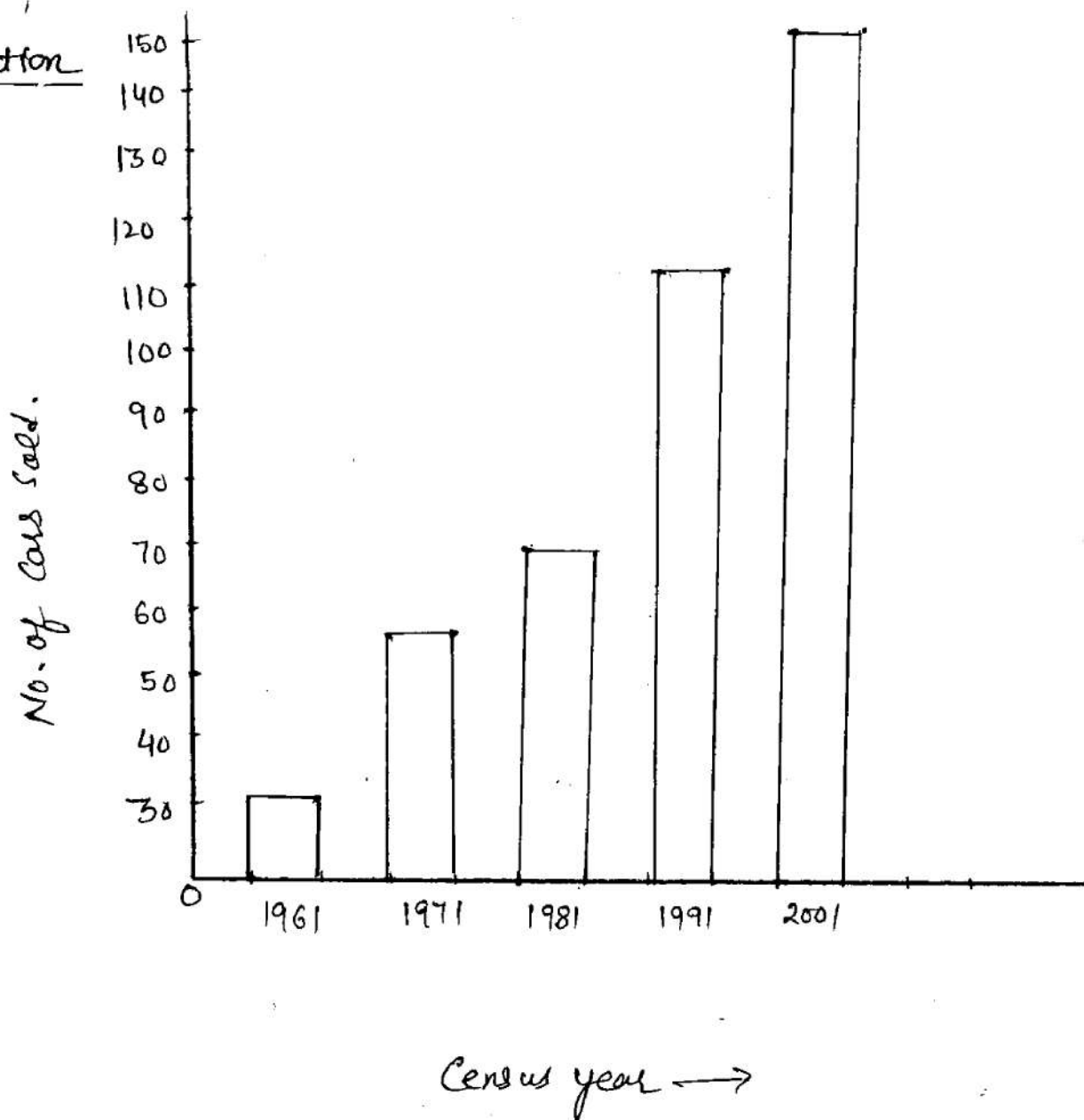
Let  = 10 cars

Q.3 The population of Delhi state in different Census years is as given below:

Census year	1961	1971	1981	1991	2001
Cars sold	30	55	70	110	150

Represent the above information with the help of a bar graph.

Solution



Q.4 Read the bar graph shown in fig 23.8 and answer the follow

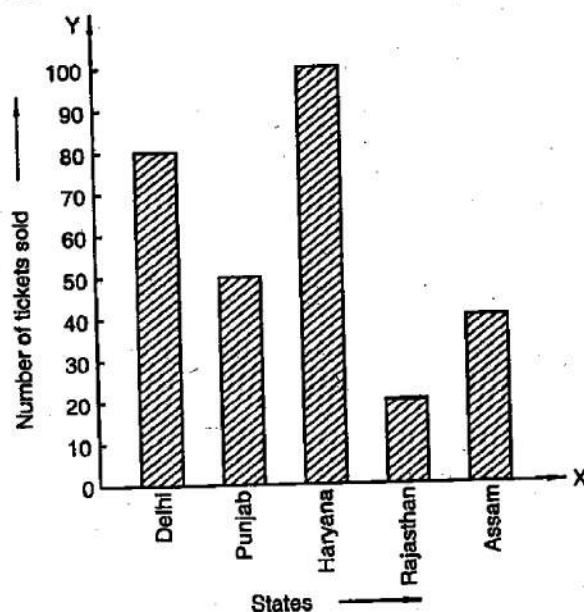


Fig. 23.8 : Bar graph of the tickets of different state lotteries sold by an agent on a day.

- (i) What is the information given by the bar graph?
- (ii) How many tickets of Assam state lottery were sold by the agent?
- (iii) of which state, were the maximum number of tickets sold?
- (iv) State whether true or false.

The maximum number of tickets sold is three times the minimum number of tickets sold.

- (v) of which state were the minimum number of tickets sold.

Solution: (i) The bargraph represents the number of tickets of different state lotteries sold by agent.

(ii) 40 tickets

(iii) Haryana

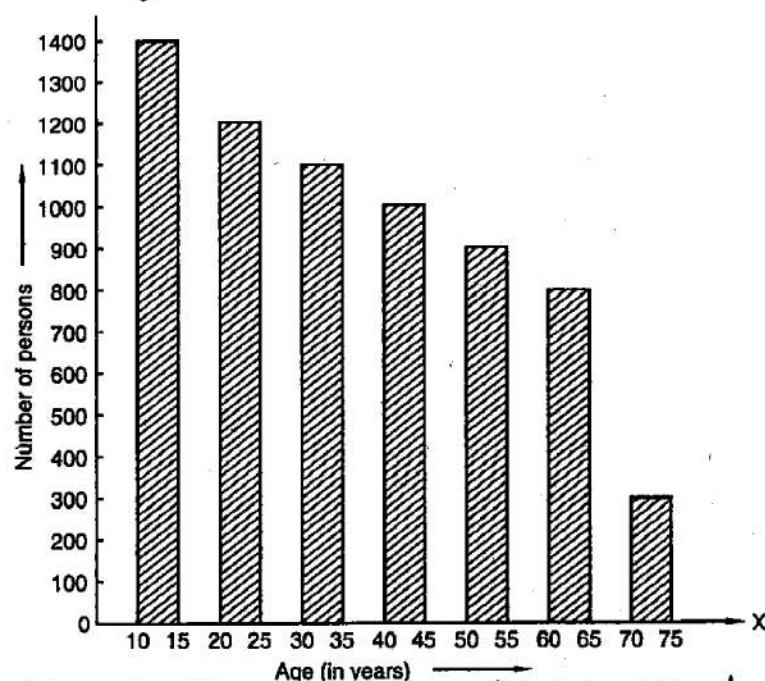
(iv) $\therefore$ Maximum tickets sold = 100 (In Haryana)
Minimum tickets sold = 20 (Rajasthan)

$\therefore$ 100 is not 3 times of 20

hence, it is false.

(v) In Rajasthan state.

Q.5 Study the bar graph representing the number of persons in various age groups in a town shown in fig 23.9. Observe the bar graph and answer the following questions.



(i) What is the Percentage of the youngest age group persons over those in the oldest age group?

(ii) What is the total population of the town?

(6)

- (iii) what is the number of persons in the age group 60-65?
- (iv) How many persons are more in the age group 10-15 than in the age group 30-35?
- (v) what is the age group of exactly 1200 persons living in the town?
- (vi) what is the total number of persons living in the town in the age group
- (vii) What is the total number of persons living in the town in the age groups 10-15 and 60-65?
- (viii) whether the population in general increases, decreases or remains constant with the increase in the age group.

Solution:

(i) Number of persons in the youngest age group of age 10-15 = 1400

No. of persons in the oldest age group of age 70-75 years = 300

$$\therefore \text{Difference} = 1400 - 300 = 1100$$

Thus, % of youngest group over oldest group

$$= \frac{1100}{300} \times 100 = \frac{1100}{3} = 366\frac{2}{3}\%$$

$$\begin{aligned}
 \text{(ii) Total Population of town} &= 1400 + 1200 + 1100 \\
 &\quad + 1000 + 900 + 800 + 300 \\
 &= 6700
 \end{aligned}$$

(iii) 800 Persons

(iv) Number of Persons in the age group 10-15 = 1400
 no. of persons in age group 30-35 = 1100

$$\begin{aligned}
 \therefore \text{Difference} &= 1400 - 1100 \\
 &= 300
 \end{aligned}$$

$\therefore$ 300 persons are more in the age group 10-15

(v) Age group of 1200 persons is 20-25

(vi) 900 Persons.

(vii) no. of persons in age group 10-15 = 1400
 no. of persons in age group 60-65 = 800

$$\begin{aligned}
 \text{Total Persons} &= 1400 + 800 \\
 &= 2200
 \end{aligned}$$

(viii) As from the graph we observe that population of town decreases with the age group.

Q.6 Read the bar graph shown in fig 23.10 and answer the following questions.

- (i) What is the information given by the bar graph?
- (ii) What was the number of Commercial banks in 1977?
- (iii) What is the ratio of the number of Commercial banks in 1969 to that in 1980.
- (iv) State whether true or false.

The Number of Commercial banks in 1983 is less than double the number of Commercial banks in 1969.

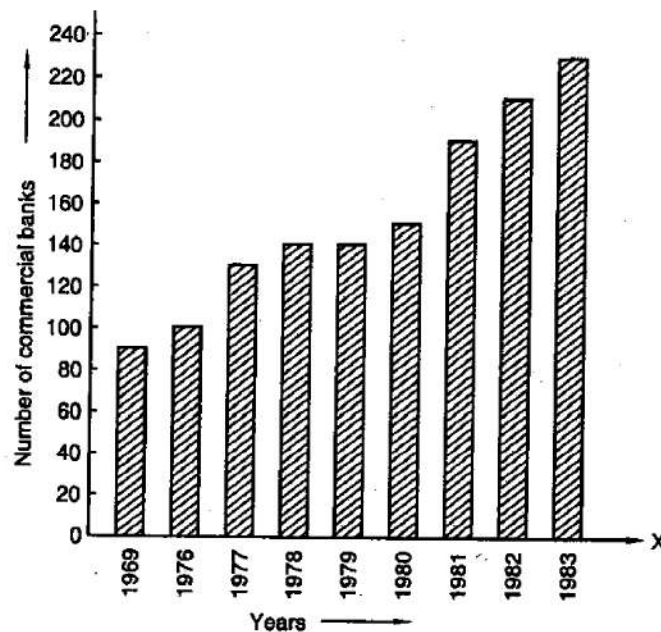


Fig. 23.10 : Bar graph of the number of commercial banks in India during some years.

Solution !

- (i) Number of Commercial banks in India during some years.
- (ii) 130 banks.

(iii) No. of banks in 1969 = 90

No. of banks in 1980 = 150

$\therefore$ Hence the ratio = $90:150$
 $= 3:5$

(iv) False

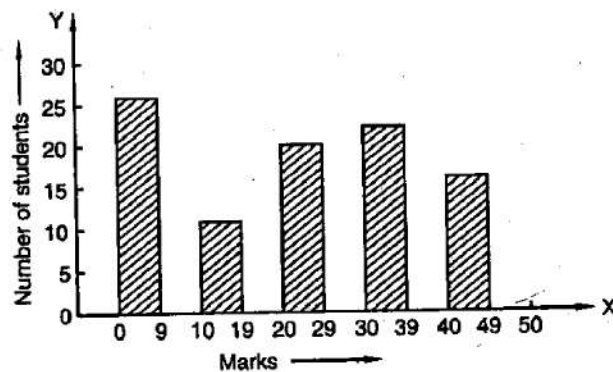
As, No. of banks in 1983 = 230

no. of banks in 1969 = 90

So, we get $2 \times 90 = 180$

$\therefore$ 230 is greater than 180.

Q.7 Given below (fig 23.11) is the bar graph indicating the marks obtained out of 50 in Mathematics paper by 100 students. Read the bar graph and answer the following questions.



- (1) It is decided to distribute work books on Mathematics to the students obtaining less than 20 marks, giving one work book to each of such students. If a work book costs Rs. 5, what sum is required to buy the work books?

- (ii) Every students belonging to the highest mark group is entitled to get a prize of Rs. 10. How much amount of money is required for distributing the prize money.
- (iii) Every students belonging to the lowest mark group has to solve 5 problems per day. How many problems in all, will be solved by the students of this group per day.
- (iv) State whether true or false
- 17% students have obtained marks ranging from 40 to 49.
 - 59 students have obtained marks ranging from 10 to 29?
- (v) What is the number of students getting less than 20 Marks?
- (vi) What is the number of students getting more than 29 Marks?
- (vii) What is the number of students getting marks between 9 and 40?
- (viii) What is the number of students belonging to the highest mark group?
- (ix) What is the number of students obtaining more than 19 marks.

Solution: (i) Number of students getting marks less than 20 = no. of students of group 0-9 + no. of students of group 10-19
 $= 27 + 12 = 39$ students

$\therefore$ Amount required to buy books $= 5 \times 39 = \text{Rs } 195$

(ii) As the highest mark group = 40-49

no. of students in this group = 17

$\therefore$ Amount required to give prize money $= \text{Rs } 17 \times 10$
 $= \text{Rs } 170$

(iii) No. of students belonging to the lowest mark group (0-9)
 $= 27$

No. of problems solved by students each day $= 5 \times 27$
 $= 135$

(iv) True

(v) False

(vi) No. of students getting less than 20 marks $= 27 + 12$
 $= 39$ students

(vii) no. of students getting more than 29 marks =

no. of students of group 30-39 + no. of students of group 40-49

$= 24 + 17 = 41$ students

(vii)

No. of students who score between 3 and 40

$$= \text{no. of students of group } 10-19 + \text{no. of students of group } 20-29 \\ + \text{no. of students of group } 30-39$$

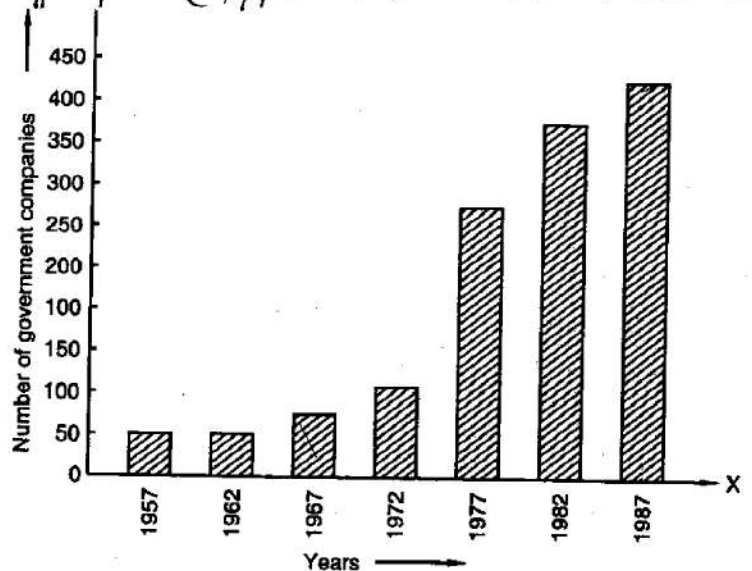
$$= 12 + 20 + 24 = 56 \text{ students.}$$

(viii) no. of students belonging to highest mark group of 40-49
 $= 17 \text{ students.}$

(ix) No. of students getting more than 19 Marks $= 20 + 24 + 17$
 $= 61 \text{ students.}$

Q.8 Read the following bar graph (fig 23.12) and answer the following questions.

fig



- (i) what is the information given by the bar graph?
- (ii) state each of the following whether it is true or false.
 - (a) The number of government companies in 1957 is that of 1982 is 1:9

(b) The number of government companies have decreased over the year 1957 to 1983.

Solution (i) Bar graph gives information of the number of government companies in India during some years.

Q1) (a) No. of govt companies in 1957 = 50

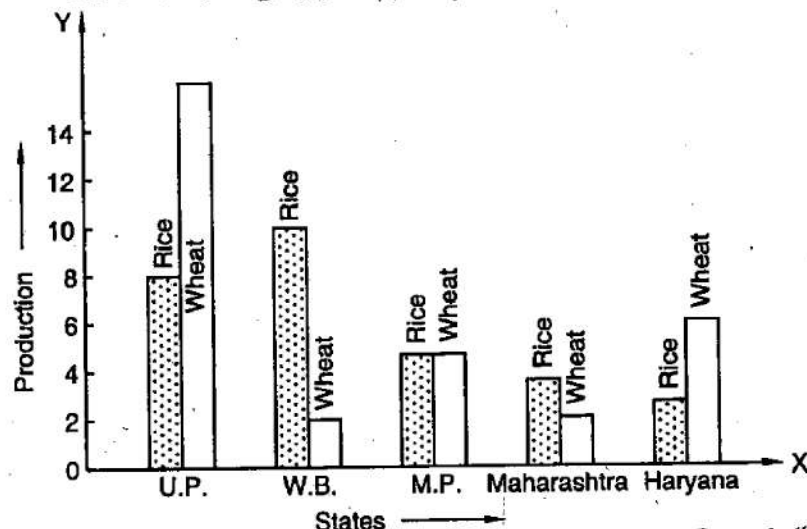
No. of govt companies in 1982 = 375

$$\text{ratio} = 50 : 375 = 2 : 15$$

hence it is false.

(b) False.

Q.9 Read the following bar graph and answer the following questions.



- (i) What information is given by the bar graph?
- (ii) Which state is the largest producer of rice?
- (iii) Which state is the largest producer of wheat?
- (iv) Which state has total production of rice and wheat as its maximum.

(v) which state has the total production of wheat and rice minimum?

Solution (i) The bar graph gives information of rice and wheat production in various states.

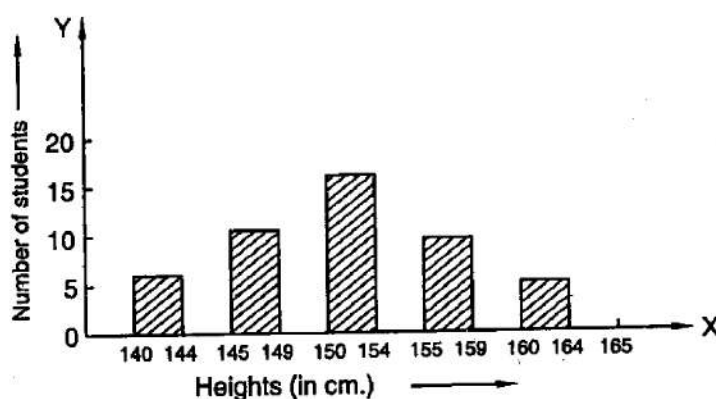
(ii) West Bengal

(iii) U. P

(iv) U. P has the total production of rice and wheat as its maximum?

(v) Maharashtra has the total production of rice and wheat minimum.

Q.10 The following bar graph (fig 23.14) represents the heights (in cm) of 50 students of class XI of a particular school. Study the graph and answer the following questions



(i) What Percentage of the total number of students have their heights more than 149 cm?

(ii) How many students in the class are in the range

of maximum height in the class?

(iii) The school wants to provide a particular type of tonic to each student below the height of 150 cm to improve his height. If the cost of tonic for each student comes out to be Rs. 55, how much amount of money is required.

(iv) How many students are in the range of shortest height of the class?

(v) State whether true or false:

- (a) There are 9 students in the class whose heights are in the range of 155-159 cm
- (b) Maximum height (in cm) of a student in the class is 17.
- (c) There are 29 students in the class whose heights are in the range of 145-154 cm.
- (d) Minimum height (in cm) of a student in the class is in the range of 140-144 cm.
- (e) The number of students in the class having their heights less than 150 cm is 12.
- (f) There are 14 students each of whom has height more than 154 cm.

Solution: Let, first we make a table by using graph.

Height (in cm)	Number of students
140-144	7
145-149	12
150-154	17
155-159	9
160-164	5

(i) No. of students having height more than 149 cm.

$$= 17 + 9 + 5 = 31 \text{ students}$$

$$\text{Total students} = 50$$

$\therefore$ % of students having height more than 149 cm

$$= \frac{31}{50} \times 100 = 62\%$$

(ii) No. of students in the range 160-164 = 5 students.

(iii) Number of students below 150 cm = $7 + 12 = 19$

Cost of tonic for one student = Rs. 55

$$\therefore \text{Total Cost} = 19 \times 55$$

$$= \text{Rs. } 1045$$

(iv) number of students of shortest height range = 7

(v) (a) True

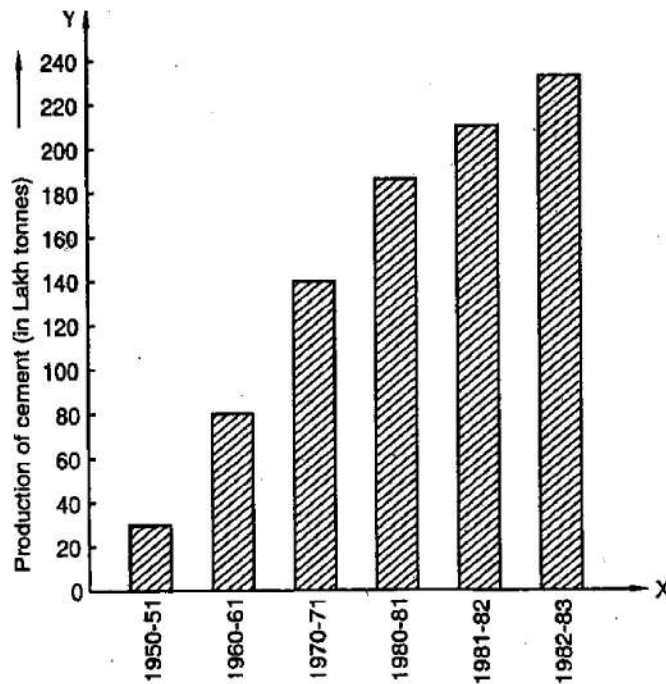
(b) False

(c) True

(d) True

(e) False

Q.11. Read the following bar graph (Fig 23.15) and answer the following questions:

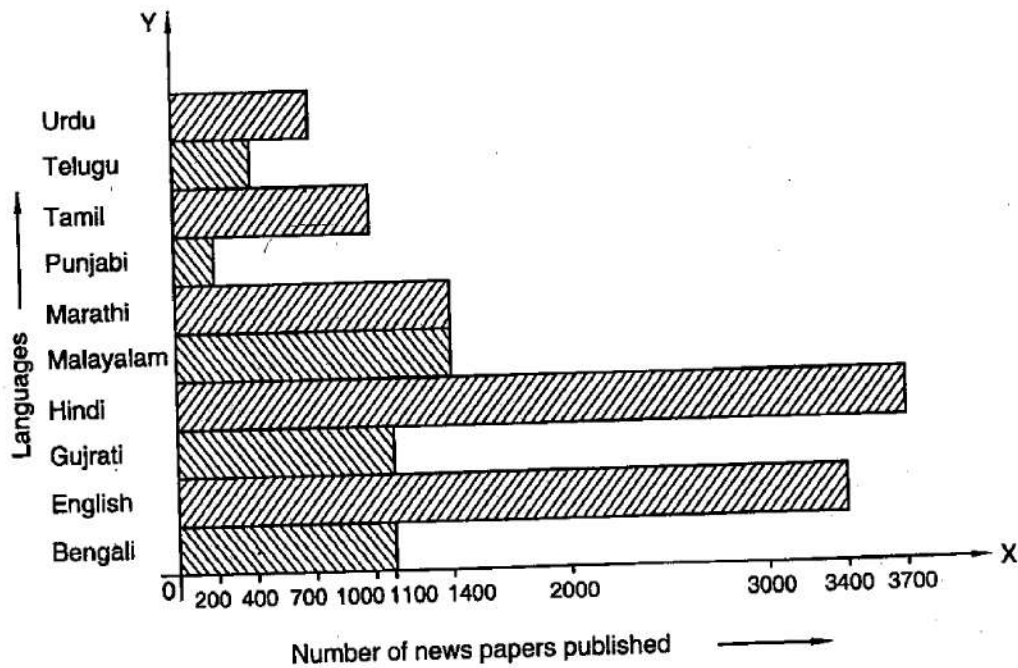


- (i) What information is given by the bar graph?
- (ii) What was the production of cement in the year 1980-81?
- (iii) What is the minimum and maximum production of cement and corresponding years?

Solution: (i) Bar graph informs about the industrial production of cement in different years in India.

- (ii) The production of cement in year 1980-81 is 186 lakh tonnes.
- (iii) Minimum production is 30 lakh tonnes in 1950-51.
- (iv) Maximum production is 232 lakh tonnes in 1982-83.

Q.12 The Bar graph shown in fig 23.16 represents the circulation of newspapers in 10 languages. Study the bar graph and answer the following questions.



- (i) What is the total number of newspapers published in Hindi, English, Urdu, Punjabi and Bengali?
- (ii) What percent is the number of newspapers published in Hindi of the total newspapers.
- (iii) Find the excess of the number of newspapers published in English over those published in Urdu?
- (iv) Name two pairs of languages which publish the same number of newspapers.
- (v) State the language in which the smallest number of newspapers are published?

(vi) State the language in which the largest number of newspapers are published.

(vii) State the language in which the number of newspaper published is between 2500 and 3500

(viii) State whether true or false

(a) The number of newspapers published in Malayalam and Marathi together is less than those published in english

(b) The number of newspapers published in telugu is more than those published in Tamil.

Solution: consider a chart using data from the Bar graph.

Language	Number of news paper Published.
Urdu	700
Telugu	400
Tamil	1000
Punjabi	200
Marathi	1400
Malayalam	1400
Hindi	3700
Gujarati	1100
English	3400
Bengali	1100

(i) Total number of news paper published
 $= 3700 + 3400 + 700 + 200 + 1100$
 $= 9100$

(ii) Number of news paper published in Hindi = 3700.

Total news paper published = $700 + 400 + 1000 + 200$
 $+ 1400 + 1400 + 3700 + 1100 + 3400 + 1100 = 14400$

$\therefore$ % of hindi news paper published = $\frac{3700}{14400} \times 100$
 $= 25.7\%$

(iii) No. of english news paper published = 3400
No. of urdu news paper published = 700
Excess papers = $3400 - 700 = 2700$

(iv) Gujarati and Bengali, Marathi and Malayalam

(v) Punjabi language

(vi) Hindi language

(vii) English

(viii) (a) True (b) false.